DOCUMENT RESUME

ED 442 596 RC 022 444

| | |
|---|---|
| AUTHOR | Young, Deidra J. |
| TITLE | Teacher Morale and Efficacy in Rural Western Australia. |
| SPONS AGENCY | Australian Research Council. |
| PUB DATE | 1998-12-00 |
| NOTE | 18p.; Paper presented at the Annual Conference of the Australian Association for Research in Education (Adelaide, South Australia, Australia, November 29-December 3, 1998). |
| CONTRACT | A79601324; F79540616 |
| AVAILABLE FROM | Full text at Web site: http://www.swin.edu.au/aare/. |
| PUB TYPE | Reports - Research (143) -- Speeches/Meeting Papers (150) |
| EDRS PRICE | MF01/PC01 Plus Postage. |
| DESCRIPTORS | Effective Schools Research; Foreign Countries; High Schools; *Organizational Climate; School Effectiveness; *Secondary School Teachers; Self Concept; *Self Efficacy; *Teacher Attitudes; *Teacher Morale |
| IDENTIFIERS | *Australia (Western Australia); School Level Environment Questionnaire |

ABSTRACT

This paper draws on the Western Australian School Effectiveness Study (WASES) to examine school-level factors associated with improved teacher morale as one measure of effective high schools. The 1997 WASES teacher sample included 212 teachers from 28 rural and urban high schools in Western Australia. Data analysis using the Multilevel Linear Model focused on teacher responses to the School Level Environment Questionnaire (SLEQ), which includes eight subscales measuring relationship, personal, and system aspects of the school environment; measures of general self-concept and academic self-concept (teacher efficacy); and the teacher morale scale of the School Organizational Health Questionnaire. Teacher morale varied both within and between schools. Teacher morale appeared to be a useful indicator of healthy and effective schools, with a reasonable correlation with SLEQ scales. Differences in teacher morale, both across and within schools, were explained by six SLEQ scales: teacher affiliation, professional interest, mission consensus, empowerment, innovation, and work pressure. Teacher self-concept, both general and academic, had little effect on teacher morale, suggesting that morale was influenced by outside factors. (Contains 58 references and 6 data tables.) (SV)

Reproductions supplied by EDRS are the best that can be made
from the original document.

ED 442 596

# *Teacher Morale and Efficacy in Rural Western Australia*

*Deidra J Young*

*Curtin University of Technology*

*Perth, Western Australia*

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Deidra Young
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

*Paper Presented to the Australian Association for Research in Education*
*1998 Annual Conference, Adelaide, South Australia, 29th November – 3rd December 1998*

*Address for correspondence:*

*Dr Deidra Young*
*Science and Mathematics Education Centre*
*Curtin University of Technology*
*GPO Box U1987*
*Perth, Western Australia 6845*
*Australia*

*Tel: +61 8 9266 2988*
*Fax: +61 8 9266 2503*
*Email: D.Young@smec.curtin.edu.au*

RC022444

BEST COPY AVAILABLE

# *Teacher Morale and Efficacy in Rural Western Australia*

*Deidra J Young*
*Curtin University of Technology*
*Perth, Western Australia*

## *Introduction*

The purpose of this study was to investigate features of effective high schools in rural Western Australia. This paper presents findings from an investigation of school level factors associated with improved Teacher Morale as one measure of effective schools. A cohort of 212 high school teachers in 28 urban and rural high schools in Western Australia, within a larger study called the *Western Australian School Effectiveness Study (WASES)*, responded to this survey. A multilevel analytical model was used to analyse variability in Teacher Morale at the school and teacher level, as well as investigate the effect of the school environment on teacher morale.

## *Background*

The concept of organizational climate was developed and researched by Halpin and Croft (1963), along with Pace and Stern (1958). Halpin and Croft constructed the Organizational Climate Description Questionnaire (OCDQ) which uses a personality metaphor to assess the school's degree of openness in interpersonal relationships. Openness is defined by these researchers as the extent to which relationships are authentic, caring and supportive. Both teachers and principals are straightforward and open in their behaviour. A closed school personality is marked by manipulation, game playing, suspicion and politicking.

Another way of looking at the school environment, is in terms of organizational health. That is a healthy organization is one that survives and grows. Parsons, Bales and Shils (1953) proposed that the organizational health is the organization's capacity to adapt to environmental changes, attain goals, while maintaining cohesion. A healthy school avoids persistent ineffectiveness, maintains integrity in its academic programs and protects its teachers from unreasonable pressures.

Wayne Hoy has worked extensively with his colleagues to developed the above two features of effective schools: openness and health. Hoy maintains that open and healthy school climates have committed teachers who share in the aims of the school over the long haul and can be counted on for extra effort (Hoy, Tarter & Bliss, 1990; Hoy et al., 1991; Tarter et al., 1989).

The definition of effective schools is often associated with improved student outcomes, both affective and cognitive, however the quality of the teachers' work life can be a strong indicator of a healthy, and consequently effective, school. Hart (1994) has demonstrated clearly that psychological distress and morale are independent factors contributing to a teacher's overall quality of work life. That poor quality of work life is improved by reduction of psychological distress, is only one possibility. Hart argues that it is lack of morale, which may be associated with the reduction in quality of teacher's work life.

In this study, Teacher Morale (from Hart's research) was measured as an indicator of healthy and effective schools. The effect of other teacher perceived measures of the school environment were investigated for their influence upon Teacher Morale. The school environment measures were derived from Fisher and Fraser's research into the teacher perceptions of the school (1990).

### *Research Questions*

Four research questions were developed for the purposes of this study. Firstly, Teacher Morale was measured and a multilevel model used to estimate the variations between teachers and between schools. Secondly, Teacher Morale was examined for its usefulness as an indicator of healthy and effective schools. Thirdly, the effect of Fisher and Fraser's (1990) SLEQ scales on Teacher Morale was estimated. Lastly, two types of teacher self-concept were estimated as explanatory variables of Teacher Morale. In summary:

1. To what extent does Teacher Morale vary within schools and between schools?
2. Is Teacher Morale a reasonable indicator of a healthy school?
3. Do the School Level Environment Questionnaire (SLEQ) scales explain variations in Teacher Morale?
4. Does Teacher Self-Concept explain variations in Teacher Morale?

### *The Sample*

This research study, the *Western Australian School Effectiveness Study* [WASES], consisted of a pilot student in 1995 (Young, 1996; Young & Fisher, 1996a, 1996b, 1996c). A longitudinal survey was commenced in Western Australian high schools in 1996. Government, Catholic and Independent secondary students and teachers were surveyed. The purpose of this survey was to evaluate the school and classroom climate and characteristics of effective schools in differential contexts. Results from the WASES 1996 data collection have previously been reported in Young (1997a, 1997b, 1997c, 1998a, 1998b). In the 1997 WASES teacher sample, there were 212 high school teachers from 28 high schools, both rural and urban. This study reports on analyses from survey data collected from these teachers.

### *School Environment*

International research efforts involving the conceptualisation, assessment and investigation of perceptions of psychosocial aspects of educational environments have established educational environment as an important field of study (Fraser, 1994, 1998; Fraser & Walberg, 1991). One of the originators of this line of research, Moos (1974), found that the same three general categories can be used in conceptualising the individual dimensions characterising diverse psychosocial environments. This finding emerged from Moos's work in a variety of environments including hospital wards, school classrooms, prisons, military companies, university residences and work milieus. The three basic types of dimensions are: Relationship Dimensions (e.g., peer support, involvement) which identify the nature and intensity of personal relationships within the environment, and assess the extent to which people are involved in the environment and the extent to which they support and help each other; Personal Development Dimensions (e.g., professional interest) which assesses the basic directions along which personal growth and self-enhancement tend to occur; and System Maintenance and System Change Dimensions (e.g., innovation, work pressure) which involve the extent to which the environment is orderly, clear in expectations, maintains control and is responsive to change.

Recent classroom environment research has focused on science laboratory classroom environments (McRobbie & Fraser, 1993), constructivist classroom environments (Taylor, Dawson & Fraser, 1995) and computer-assisted instruction classrooms (Teh & Fraser, 1995), while other studies have focused on the school environment (Fisher, Fraser & Wubbels, 1993; Fisher & Grady, 1998). However, a careful review of the potential strengths and problems associated with existing school environment instruments led to the development of a new school environment instrument named the *School Level Environment Questionnaire* (SLEQ) (Fisher & Fraser, 1990), which measures teachers' perceptions of psychosocial dimensions of the school environment. This instrument consists of seven

BEST COPY AVAILABLE

scales, with two measuring Relationship Dimensions (Student Support, Affiliation), one measuring the Personal Development Dimension (Professional Interest) and five measuring System Maintenance and System Change Dimensions (Staff Freedom, Participatory Decision Making, Innovation, Resource Adequacy and Work Pressure).

Fisher, Fraser and Wubbels (1993) have reported validation data for the SLEQ for a number of samples including one study of 46 teachers in seven Australian schools. The validation data include information about each scale's internal consistency (Cronbach alpha reliability), discriminate validity (mean correlation of a scale with the other seven scales) and the ability of the instrument to differentiate between the perceptions of teachers in different schools. The alpha coefficients for different SLEQ scales ranged from 0.65 to 0.92 suggesting that each SLEQ scale displays satisfactory internal consistency for a scale composed of only seven items.

The SLEQ consists of 56 items, with each of the eight scales being assessed by seven items. Each item is scored on a five-point scale with the responses of Strongly Agree, Agree, Not Sure, Disagree and Strongly Disagree. Table 1 describes the nature of the SLEQ by providing a scale description and sample item for each scale and shows each scale's classification according to Moos' scheme. As well, Table 1 provides information about the method and direction of scoring of SLEQ items.

For this study, all of the above mentioned SLEQ scales were used, however construction of the scales involved weights which were obtained via Confirmatory Factor Analysis.

Table 1. Description of scales in SLEQ and their classification according to Moos' scheme.

| Scale Name | Description of Scale | Sample Item | Moos's Category |
|---|---|---|---|
| Student Support | There is good rapport between teachers and students and students behave in a responsible self-disciplined manner. | There are many disruptive, difficult students in the school. (–) | Relationship |
| Affiliation | Teachers can obtain assistance, advice and encouragement and are made to feel accepted by colleagues. | I feel that I could rely on my colleagues for assistance if I should need it. (+) | Relationship |
| Professional Interest | Teachers discuss professional matters, show interest in their work and seek further professional development. | Teachers frequently discuss teaching methods and strategies with each other. (+) | Personal Development |
| Mission Consensus | Consensus exists within the staff about the goals | Teachers agree on the school's overall goals. (+) | System Maintenance and System Change |
| Empowerment | Teachers are empowered and encouraged to be involved in decision making processes. | Decisions about the running of this school are usually made by the principal or a small group of teachers. (–) | System Maintenance and System Change |
| Innovation | The school is in favour of planned change and experimentation, and fosters classroom openness and individualisation. | Teachers are encouraged to be innovative in this school (+) | System Maintenance and System Change |
| Resource Adequacy | Support personnel, facilities, finance, equipment and resources are suitable and adequate. | The supply of equipment and resources is inadequate. (–) | System Maintenance and System Change |
| Work Pressure | The extent to which work pressures dominates school environment. | Teachers have to work long hours to keep up with the workload. (+) | System Maintenance and System Change |

Items designated (+) are scored by allocating 5, 4, 3, 2, 1, respectively, for the responses Strongly Agree, Agree, Not Sure, Disagree, Strongly Disagree. Items designated (–) are scored in the reverse manner. Omitted or invalid responses are given a score of 3.



BEST COPY AVAILABLE

### *Teacher Self-Concept (Efficacy)*

> "That self-concept is related to achievement presupposes that certain classroom environments enhance both aspects." (Hattie, 1992, p. 197).

In previous research about self-concept, the multidimensional nature has been well documented (Byrne, 1984; Hattie, 1992; Marsh, 1990, 1993; Marsh & Shavelson, 1985). The academic components of the model have been the focus of attention in relationship to external constructs such as academic achievement. For teachers, it was important to also measure self-concept. We included two components of the Marsh Self Description Questionnaire (SDQII) designed to measure self-concept, with some modification for teachers' perceptions of their own ability and self-esteem (Marsh, 1992).

The two measures of Self-Concept, namely, General Self-Concept and Academic Self-Concept, are comprised of 10 items. Examples of items from these two measures are presented in Table 2. The General Self-Concept scale describes the teacher's feelings and beliefs. There were both negative and positive statements related to success and failure in life. The Academic Self-Concept scale measures the teachers' perceptions about their academic ability and potential to be a success at teaching. The construction of the Self-Concept scales involved the use of Confirmatory Factor Analysis and the method is described in a latter section of this paper.

Teachers' perceptions of their academic ability is often called Teacher Efficacy. Teacher Efficacy developed out of Bandura's theory of self-efficacy (1977; 1993). Bandura proposed that a person was motivated by two forces: outcome expectations and efficacy expectations. Outcome expectations refer to a person's belief that their behaviour will result in a specific outcome. Efficacy expectations refer to the person's belief that he/she is capable of demonstrating the behaviours necessary to achieve the outcome.

**Table 2. Description of some items from the Self-Concept scales.**

| Self-Concept Scales and Items | | |
|---|---|---|
| **Scale** | **Example Items** | **No. Items** |
| General Self-Concept | Overall, I have a lot of achievements to be proud of.<br>Most things I do, I do well.<br>I don't get upset very easily.<br>Nothing I do ever seems to turn out right.<br>Overall, most things I do turn out well.<br>If I really try, I can do almost anything I want to do. | 10 |
| Academic Self-Concept | People come to me for help in my teaching area.<br>Overall, I am not an effective teacher.<br>I was not good enough to go very far in University.<br>If I work really hard, I could be one of the best teachers in my school.<br>I have trouble teaching most school subjects.<br>I learn things quickly in most academic subjects. | 10 |

**Teacher Efficacy, the belief that one can bring about desired outcomes in one's students, has been found to discriminate teachers in less effective schools from those in more effective schools.**
**(Soodak & Podell, 1996)**



BEST COPY AVAILABLE

### *Teacher Morale*

A measure from the School Organisational Health Questionnaire (SOHQ; Hart, Carter, Conn, Dingle & Wearing, 1993; Hart, 1994) was used in the teacher questionnaire to measure Teacher Morale in the school and the items used in this scale are found in Table 3. The purpose of this questionnaire was to assess how the school's organisational climate contributes to teachers' psychological distress, school organisational health and teacher morale. This instrument has already been validated by Hart and colleagues, and differs greatly from the School Level Environment Questionnaire (SLEQ) developed by Fisher and Fraser and described previously. The latter instrument does not measure human interactions such as feedback, role clarity and other features of teacher happiness in the work place.

For the purposes of this study, only one scale was selected for inclusion in the teacher questionnaire from the SOHQ in order to measure an important aspect of teacher psychological health: Teacher Morale.

Table 3. Description of some items from the Teacher Morale scales.

| Teacher Morale Items |
|---|
| There is a good team spirit in this school. |
| There is a lot of energy in this school. |
| The morale in this school is high. |
| Teachers go about their work with enthusiasm. |
| Teachers take pride in this school. |

### *Methodology*

*Confirmatory Factor Analysis*

These composite scales consisted of items, which were categorical, not continuous. Additionally, these items varied in their loadings, which indicated that Confirmatory Factor Analysis was crucial to the effective construction of the composite scale. When the observed variables (items) are non-normal and non-continuous, the use of product-moment correlations can lead to large negative biases in their estimates (Jöreskog, 1990; Carroll, 1961, 1963, 1989). It is therefore a significant feature of this study that Structural Equation Modelling techniques (WLS) were used, which assume that the observed variables are measured on an interval scale with non-normal distributions. Jöreskog (1994, p. 383) observed that ordinal variables represent a set of ordered categories, such as the five-category Likert scale, which need to be treated differently.

The Weighted Least Squares (WLS) method available in LISREL 8 was developed to assist with the analysis of non-normally distributed variables by providing an appropriate weight matrix, correct parameter estimates, standard errors and a fit statistic. "The weight matrix required for such an analysis is the inverse of the estimated asymptotic covariance matrix **W** of the polychoric and polyserial correlations" (Jöreskog & Sörbom, 1993, p. 45).

In this study, the polychoric correlation matrix and asymptotic variance-covariance matrix were produced using Weighted Least Squares (WLS) PRELIS, which was then analysed using LISREL. This procedure was used to calculate each composite scale, assuming the one-factor congeneric measurement model. The one-factor congeneric measurement model (Jöreskog, 1971) was used in order to construct a set of factor score regression weights using LISREL (Jöreskog & Sörbom, 1996). Fitting a congeneric measurement model allows for differences in the contribution each individual measure contributes to the overall composite scale (Fleishman & Benson, 1987).

*Reliability*

That reliability is the consistency of measurement is a concept which has developed from classical test theory and assumes that a single true score underlies a measure (Bollen, 1989, p. 221). While Cronbach's (1951) alpha coefficient is the most popular reliability coefficient in social science research, it has the weakness of underestimating reliability for congeneric measures. Bollen recommends using the Coefficient of Determination $R^2_{xi}$, as a viable alternative for measuring reliability, where structural equations are being used. This is the measure of the proportion of variance in a measure, which is explained by the variables that directly effect $x_i$.

For the purposes of this research, the Coefficient of Determination was used as the measure of reliability. The method used was based upon Werts, Rock, Linn and Jöreskog (1978). The Coefficient of Determination is provided in Table 5 in order to show the true reliability. Composite scales were prepared using the confirmatory factor analysis described above with factor score regression weights.

*Descriptive Statistics*

When the composite scales were correlated with one another, along with Teacher Morale, almost all were statistically significant in their relationships with Teacher Morale (see Table 4). However, Work Pressure and General Self-Concept were not significant. Teacher Morale was most strongly correlated with Affiliation, Professional Interest, Mission Consensus, Empowerment and Innovation. The SLEQ scales were all weak to medium in strength of correlation with one another. In particular, Work Pressure was not correlated with the other SLEQ scales.

The means, standard deviations, range, counts, Cronbach's Alpha reliability and Coefficient of Determination are presented in Table 5. All scales varied from 1 to 5, as suggested by the Likert style of the individual items.

*The Three-Level Multilevel Linear Model: Background*

The Multilevel Linear Model provides an integrated strategy for handling problems such as aggregation bias in standard error estimates and erroneous probability values in hypothesis testing of school effects. For this study, MLwiN was chosen as the software program appropriate to study school and student effects relating to student outcomes (Goldstein et al., 1998). Research on school effects has previously been conducted with a set of data analysed at the individual student level, with the assumption that classrooms and schools affect students equally. However, when the effects vary among individuals and their contexts, this type of statistical analysis can be misleading (Bryk & Raudenbush, 1987). Ordinary least squares analysis provides information about the total variance, but can only break this total variance into the between- and within-school effects. The between-school effect may be influenced by school level variables, such as the affluence of the school. This study endeavoured to explain variations in student outcomes by first decomposing observed relationships into between- and within-school components.

Previous studies have shown clearly that educational researchers need to account for the inherent multilevel structure of data collected from schools and this literature includes Mason and colleagues (1983), Bosker and Scheerens (1989), Bryk and Raudenbush (1986, 1989, 1992) and Goldstein (1984, 1987, 1995).

Table 4. Correlation Matrix of Teacher Variables: Pearson's Correlation Coefficient and 2-tailed Significance.

| Variable | Morale | General Self-Concept | Academic Self-Concept | Student Support | Affiliation | Professional Interest | Mission Consensus | Empowerment | Innovation | Resource Adequacy | Work Pressure |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Morale | 1.00 | | | | | | | | | | |
| General Self-Concept | .12 | 1.00 | | | | | | | | | |
| Academic Self-Concept | .14* | .61** | 1.00 | | | | | | | | |
| Student Support | .19** | .19** | .18** | 1.00 | | | | | | | |
| Affiliation | .50** | .20** | .08 | .24** | 1.00 | | | | | | |
| Professional Interest | .57** | .17* | .12 | .19** | .64** | 1.00 | | | | | |
| Mission Consensus | .60** | -.01 | .06 | .14* | .27** | .45** | 1.00 | | | | |
| Empowerment | .42** | .08 | .08 | .21** | .27** | .35** | .39** | 1.00 | | | |
| Innovation | .52** | .11 | .12 | .06 | .34** | .48** | .53** | .40** | 1.00 | | |
| Resource Adequacy | .16* | .07 | .19* | .27** | .15* | .21** | .20** | .16* | .13 | 1.00 | |
| Work Pressure | -.11 | .04 | -.02 | -.07 | .07 | .03 | -.02 | -.11 | .00 | -.15* | 1.00 |

Table 5. Means, reliabilities for teacher/school variables 1997 cohort of teachers in the WASES study.

| Variable | Mean | Standard Deviation | Minimum | Maximum | N | Coefficient of Determination |
|---|---|---|---|---|---|---|
| Morale | 3.56 | .75 | 1.00 | 5.00 | 212 | .990 |
| General Self-Concept | 4.45 | .48 | 2.71 | 5.00 | 212 | .931 |
| Academic Self-Concept | 4.06 | .62 | 1.59 | 5.00 | 212 | .977 |
| Student Support | 3.94 | .72 | 1.53 | 5.00 | 212 | .986 |
| Affiliation | 4.13 | .72 | 1.24 | 5.00 | 212 | .961 |
| Professional Interest | 3.71 | .68 | 1.50 | 4.84 | 212 | .926 |
| Mission Consensus | 3.46 | .76 | 1.26 | 5.00 | 212 | .926 |
| Empowerment | 3.23 | .76 | 1.02 | 5.00 | 212 | .853 |
| Innovation | 3.39 | .77 | 1.05 | 5.00 | 212 | .918 |
| Resource Adequacy | 3.40 | .72 | 1.20 | 5.00 | 212 | .890 |
| Work Pressure | 3.91 | .73 | 1.07 | 5.00 | 212 | .933 |



BEST COPY AVAILABLE

### *Results of the Multilevel Model*

*Model 1: Null Model*

A two-level model of analysis was used to separate the variance at school and teacher levels of analysis (see Table 6). When Teacher Morale was estimated with no explanatory variables, 27 % of variation in morale was determined at the school level and 74 % at the teacher level. That is, while there was a lot of variation between schools in morale, most of the variation was between teachers. Within any one school, there was a great deal of difference between teacher perceptions of their own morale and their colleagues' morale.

*Models 2 and 3: School Level Environment Questionnaire Scales (SLEQ)*

Initially, all of the eight SLEQ scales were estimated for their effect on teacher morale (see Table 6). However, only six of these scales turned out to be statistically significant. Teacher's perceptions of Student Supportiveness and Resource Adequacy did not apparently Affect teacher morale to any extent. Model 2 provides the estimated results with all eight SLEQ scales, while Model 3 describes the estimated results with only the statistically significant six SLEQ scales.

The six SLEQ scales which were significant included Teacher Affiliation, Professional Interest, Mission Consensus, Empowerment, Innovation and Work Pressure. These scales accounted for 80 % of the school level variation in teacher morale and 45 % of teacher level variance, with 54.4 % of the total variance in teacher morale explained by the SLEQ scales. The deviance in the log(likelihood) was 151 which was also statistically significant.

*Model 4: Teacher Efficacy (Self-Concept)*

While it was expected that Teacher Self-Concept would be associated with Teacher Morale, both General And Academic Self-Concept were not significant (see Table 6). That is, once the SLEQ scales were included in the model of Teacher Morale, Teacher Self-Concept did not explain any further variations at either the school or teacher level. There was no further reduction in the log(likelihood) or variance and the parameter estimates were not significant.

Table 6. Parameter Estimates and Standard Errors for the Multilevel Analysis of Teacher Morale (Teachers and Schools): Model 1 (Null Model), Model 2 (School Level Environment Questionnaire Scales), Model 3 (Restricted SLEQ Scales) and Model 4 (Restricted SLEQ Scales and Teacher Self-Concept Scales).

| | Null Model 1' | Model 2' | Model 3' | Model 4' |
|---|---|---|---|---|
| **Fixed Parameters** | **Estimate (s.e.)** | **Estimate (s.e.)** | **Estimate (s.e.)** | **Estimate (s.e.)** |
| Intercept | 3.524 (0.089) | 0.636 (0.369) | 0.601 (0.307) | 0.488 (0.423) |
| Student Support | | 0.049 (0.054) | | |
| Affiliation | | 0.199 (0.064)* | 0.206 (0.063)* | 0.210 (0.064)* |
| Professional Interest | | 0.201 (0.074)* | 0.199 (0.074)* | 0.196 (0.074)* |
| Mission Consensus | | 0.310 (0.058)* | 0.311 (0.058)* | 0.312 (0.059)* |
| Empowerment | | 0.106 (0.054)* | 0.112 (0.053)* | 0.112 (0.053)* |
| Innovation | | 0.136 (0.059)* | 0.123 (0.057)* | 0.121 (0.058)* |
| Resource Adequacy | | -0.063 (0.053) | | |
| Work Pressure | | -0.132 (0.049)* | -0.128 (0.048)* | -0.127 (0.048)* |
| General Self-Concept | | | | -0.030 (0.093) |
| Academic Self-Concept | | | | 0.060 (0.070) |
| **Random Parameters** | **Variance Estimate** | **Variance Estimate** | **Variance Estimate** | **Variance Estimate** |
| School Variance | 0.157 (0.060) | 0.032 (0.018) | 0.031 (0.017) | 0.029 (0.017) |
| Teacher Variance | 0.421 (0.044) | 0.231 (0.024) | 0.232 (0.024) | 0.234 (0.024) |
| Total Variance | 0.578 | 0.263 | 0.263 | 0.263 |
| -2 log(likelihood) | 452.547 | 301.574 | 303.526 | 302.772 |
| Deviance* | | 151 | 149 | 150 |

| | Variance at Each Level for the Null Model 1 | Variance Explained by the Explanatory Variables in Model 2 | Variance Explained by the Explanatory Variables in Model 3 | Variance Explained by the Explanatory Variables in Model 4 |
|---|---|---|---|---|
| School Level | 27 % | 80 % | 80 % | 81.5 % |
| Teacher Level | 74 % | 45 % | 45 % | 44 % |
| Total Variance Explained | 100 % | 54.5 % | 54.4 % | 54.4 % |

* The deviance statistic is the difference in -2log(likelihood), which is a chi-squared distribution and significant.

† N = 212 Teachers within 28 schools



BEST COPY AVAILABLE

## *Discussion*

The study of school effectiveness is comprised of many separate issues, including the study of student outcomes, learning environments, school climate and organizational health. Of particular interest here was the relationship between Teacher Morale, Teacher Efficacy/Self-Concept and the School Environment.

Four research questions were investigated here:

1. To what extent does Teacher Morale vary within schools and between schools?
2. Is Teacher Morale a reasonable indicator of a healthy schooi?
3. Do the School Level Environment Questionnaire (SLEQ) scales explain variations in Teacher Morale?
4. Does Teacher Self-Concept explain variations in Teacher Morale?

1. The results of these analyses demonstrated that Teacher Morale varied both within and between schools. This finding clearly shows the importance of examining two aspects of morale: the individual and the corporate morale of an organization.

2. Teacher Morale appeared to be a useful indicator of healthy and effective schools, with a reasonable correlation with SLEQ scales.

3. Six of the SLEQ scales explained differences in Teacher Morale both across schools and within schools. It appeared that morale was influenced by the school environment and climate.

4. Teacher Self-Concept, both general and academic, had little effect in explaining differences in Teacher Morale. It appeared that morale was influenced by outside factors, rather than internal ones.

The study suggests that student outcomes, both affective and cognitive, are only one type of indicator of effective schools. The study of how teachers perceive and feel about their school is another important indicator of an effective school. While the school level environment questionnaire has been used extensively to study teacher beliefs about their school, there is significant research demonstrating the usefulness of teacher morale and other school health characteristics in identifying effective schools. Hart's School Organizational Health Questionnaire includes the following scales, which place more emphasis on the principal/teacher interaction (1994). Further research documenting the health and effectiveness of schools is needed.

5. Teacher Morale
6. Feedback to Teachers re their Work Performance
7. Professional Interaction
8. Supportive Leadership
9. Goal Congruence (similar to mission consensus)
10. Professional Development (similar to professional interest but indicates how the school provides opportunities for PD)
11. Participative Decision-making (similar to empowerment)
12. Role Clarity

### *Limitations of the Study*

Teachers who participated in this study were active partners in collecting and coordinating the testing procedure. However, it should be noted that this study required more funding than other comparable studies of school effectiveness. Additionally, in Western Australia the rural high schools are spread much further apart making it much more difficult to visit them without expending considerable funds in travel costs. It would have been advantageous if more funds had been available for supporting this study; however the competition for grant funding is critical.

### *Acknowledgements*

The *Western Australian School Effectiveness Study* was supported by an Australian Research Council Large Grant (No. A79601324) and an Australian Research Council Research Fellowship (ARF) (No. F79540616). I would like to thank Beverley Webster, Emma Lalor, Erlinda La Coste and David Henderson who assisted with the preparation of the WASES research data collection. The author is grateful to Dr Kenneth Rowe, University of Melbourne, along with the anonymous reviewers who have provided invaluable advice and encouragement in the preparation of this manuscript.

### *References*

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191-215.

Bandura, A. (1993). Perceived self-efficacy in cognitive development and functioning. *Educational Psychologist, 28*(2), 117-148.

Bollen, K. A. (1989). *Structural equations with latent variables.* New York: John Wiley.

Bosker, S. T., & Schereens, J. (1989). Criterion choice, effect size and stability: Three fundamental problems in school effectiveness research. In B. P. M. Creemers and D. Reynolds (Eds.), *School Effectiveness and School Improvement.* Lisse: Swets and Zeitlinger.

Bryk, A.S., & Raudenbush, S.W. (1986). A hierarchical model for studying school effects. *Sociology of Education, 59*(1), 1-17.

Bryk, A.S., & Raudenbush, S.W. (1987). Application of hierarchical linear models to assessing change. *Psychological Bulletin, 101*(1), 147-158.

Bryk, A.S., & Raudenbush, S.W. (1989). Toward a more appropriate conceptualisation of research on school effects: A three-level hierarchical linear model. In R. D. Bock (Ed.), *Multilevel analysis of educational data.* San Diego: Academic Press.

Bryk, A. S., & Raudenbush, S. W. (1992). *Hierarchical linear models: Applications and data analysis methods.* Newbury Park, California: Sage Publications.

Byrne, B.M. (1984). The general/academic self-concept nomological network: A review of construct validation research. *Review of Educational Research, 54*, 427-456.

Carroll, J. B. (1961). The nature of data, and how to choose a correlation coefficient. *Psychometrika, 26*, 347-372.

Carroll, J.B. (1963). A model of school learning. *Teachers College Record, 64*, 723-733.

Carroll, J.B. (1989). The Carroll model: A 25-year retrospective and prospective view. *Educational Researcher, 18*, 26-31.

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*, 297-334.

Fisher, D. L., & Fraser, B. J. (1990). Assessing and improving school climates. *Set, New Zealand Council for Educational Research, 2*, 1-8.

Fisher, D. L., Fraser, B. J., & Wubbels, T. (1993). Interpersonal teacher behaviour and school climate. In T. Wubbels and J. Levy, (Eds.), *Do you know what you look like?: Interpersonal relationships in education.* (pp. 103-112). London: The Falmer Press.

Fisher, D. L., & Grady, N. (1998). Teachers' images of their schools and perceptions of their work environments. *School Effectiveness and School Improvement, 9*(3), 334-348.

Fleishman, J., & Benson, J. (1987). Using LISREL to evaluate measurement models and scale reliability. *Educational and Psychological Measurement, 47*, 925-939.

Fraser, B. J. (1994). Research on classroom and school climate. In D. Gabel (Ed.), *Handbook of research on science teaching and learning,* (pp. 493-541). New York: Macmillan.

Fraser, B. J. (1998). Science learning environments: Assessments, effects and determinants.



BEST COPY AVAILABLE

In B. J. Fraser & K.G. Tobin (Eds.), *International handbook of science education,* (pp. 527-564). Dordrecht, the Netherlands: Kluwer Academic Publishers.

Fraser, B. J., & Walberg, H. J. (Eds.). (1991). *Educational environments: Evaluation, consequences, and antecedents.* Oxford, England: Oxford Pergamon Press.

Goldstein, H. (1984). The methodology of school comparisons. *Oxford Review of Education, 10,* 69-74.

Goldstein, H. (1987). *Multilevel models in educational and social research.* London: Charles Griffin & Co.

Goldstein, H. (1995). *Multilevel statistical models.* Second Edition. London: Arnold, Hodder Headline Group.

Goldstein, H., Rasbash, J., Plewis, I., Draper, D., Browne, W., Yang, M., Woodhouse, G., & Healy, M. (1998). *A user's guide to MLwiN.* London: Multilevel Models Project, Institute of Education, University of London.

Halpin, A.W., & Croft, D.B. (1963). *The organizational climate of schools.* Chicago: Midwest Administration Center of the University of Chicago.

Hart, P.M. (1994). Teacher quality of work life: Integrating work experiences, psychological distress and morale. *Journal of Occupational and Organisational Psychology, 67,* 109-132.

Hart, P.M, Carter, N.L., Conn, M., Dingle, R.K., & Wearing, A. (1993). *Development of the school organisational health questionnaire: A measure for assessing teacher morale and school organisational climate.* Paper presented at the 1993 Annual Conference of the Australian Association for Research in Education, Fremantle, Western Australia.

Hattie, J. (1992). *Self-concept.* Hillsdale, NJ: Erlbaum.

Hoy, W.K., Tarter, C.J., & Bliss, J.R. (1990). Organizational health, climate, and effectiveness: A comparative study. *Educational Administration Quarterly, 26,* 260-279.

Hoy, W.K., Tarter, C.J., & Kottkamp, R.B. (1991). Open schools/healthy schools: Measuring organizational climate. Newbury Park, CA: Sage.

Jöreskog, K.G. (1971). Statistical analysis of sets of congeneric tests. *Psychometrika, 36,* 109-133.

Jöreskog, K.G. (1990). New developments in LISREL: Analysis of ordinal variables using polychoric correlations and weighted least squares. *Quality and Quantity, 24,* 387-404.

Jöreskog, K.G. (1994). On the estimation of polychoric correlations and their asymptotic covariance matrix. *Psychometrika, 59,* 381-389.

Jöreskog, K.G., & Sörbom, D. (1993). *New features in PRELIS 2.* Chicago: Scientific Software International.

Jöreskog, K.G., & Sörbom, D. (1996). *LISREL 8: User's reference guide.* Chicago: Scientific Software International.

Marsh, H.W. (1990). Multidimensional, hierarchical self-concept: Theoretical and empirical justification. *Educational Psychology Review, 2,* 77-172.

Marsh, H. W. (1992). Self description questionnaire - II manual. Sydney: University of Western Sydney.

Marsh, H.W. (1993). Academic self-concept: Theory measurement and research. In J. Suls, (Ed.) *Psychological perspectives on the self* (Vol. 4, pp. 59-98). Hillsdale, NJ: Erlbaum.

Marsh, H.W., & Shavelson, R.J. (1985). Self-concept: Its multifaceted, hierarchical structure. *Educational Psychologist, 20,* 107-125.

Mason, W. M., Wong, G.M., & Entwistle, B. (1983). Contextual analysis through the multilevel linear model. In S. Leinhardt (Ed.), *Sociological Methodology* (pp. 72-103). San Francisco: Jossey-Bass.

McRobbie, C. J., & Fraser, B. J. (1993). Associations between student outcomes and psychosocial science laboratory environments. *Journal of Educational Research, 87,* 78-85.

Moos, R. H. (1974). *The social climate scales: An overview.* Palo Alto, CA: Consulting Psychologists Press.

Parsons, T., Bales, R.F., & Shils, E.A. (1953). *Working papers in the theory of action.* Glencoe, IL: Free Press.

Pace, C.R., & Stern, G.C. (1958). An approach to the measure of psychological characteristics of college environments. *Journal of Educational Psychology, 49,* 269-277.

Soodak, L.C., & Podell, D.M. (1996). Teacher efficacy: Toward the understanding of a multi-faceted construct. *Teaching and Teacher Education, 12*(4), 401-411.

Tarter, C.J., Hoy, W.K., & Bliss, J.R. (1989). Principal leadership and organizational commitment: The principal must deliver. *Planning and Changing, 20,* 129-140.

Taylor, P. C., Dawson, V., & Fraser, B. J. (1995, April). *CLES: An instrument for monitoring the development of constructivist learning environments.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Teh, G., & Fraser, B. J. (1995). Development and validation of an instrument for assessing the psychosocial environment of computer-assisted learning classrooms. *Journal of Educational Computing Research, 12,* 177-193.

Werts, C.E., Rock, D.R., Linn, R.L., & Jöreskog, K.G. (1978). A general method of estimating reliability of a composite. *Educational and Psychological Measurement, 38,* 933-938.

Young, D.J. (1996, November). *The effect of the classroom environment on career choice: A rural perspective.* Paper presented to the Joint Annual Conference of the Australian Association for Research in Education and Educational Research Association, Singapore [WWW: http://www.swin.edu.au/aare/confpap.htm].

Young, D.J. (1997a, January). *Western Australian school effectiveness study: Features of effective schools.* Paper presented to the Tenth Annual International Congress for School Effectiveness and School Improvement, Memphis, Tennesee.

Young, D.J. (1997b, March). *A multilevel analysis of science and mathematics achievement: The influence of school and classroom effects in a rural setting.* Paper presented at the 1997 Annual Meeting of the American Educational Research Association, Chicago, Illinois.

Young, D.J. (1997c, July). *Self-esteem in rural schools.* Paper presented at the 1997 National Conference of the Society for the Provision of Education in Rural Australia, Adelaide, South Australia.

Young, D.J. (1998a). Ambition, self-concept and achievement: A structural equation model for comparting rural and urban students. *Journal of Research in Rural Education, 14*(1), 34–44..

Young, D.J. (1998b). Academic self-concept and the learning environment: A multilevel analysis of rural and urban schools. *School Effectiveness and School Improvement. 9*(4).

Young, D.J., & Fisher, D.L. (1996a, August). *School effectiveness research in rural schools.* Paper presented to the Western Australian Institute for Educational Research Annual Forum, Perth, Western Australia [WWW: http://liswww.fste.ac.cowan.edu.au /wild/waier/Papers/Young.html].

Young, D.J., & Fisher, D.L. (1996b, August). *The classroom environment in Western Australian rural schools.* Paper presented to the Annual Conference of the Society for the Provision of Education in Rural Australia, Hobart, Tasmania.

Young, D.J., & Fisher, D.L. (1996c, November). *The school environment and student self-concept: A comparison of urban and rural schools.* Paper presented to the Joint Annual Conference of the Australian Association for Research in Education and Educational Research Association, Singapore [WWW: http://www.swin.edu.au/aare/ confpap.htm].

BEST COPY AVAILABLE